LEPIDOPTERA RHOPALOCERA

FAM. PAPILIONIDÆ

SUBFAM. PAPILIONINÆ

SECT. TROIDES, HÜBNER

by Robert H. F. RIPPON

WITH 2 COLOURED PLATES

General View of Classification. — The Ornithoptera were not separated from the Papilios as a distinct genus until the year 1832, when Boisduval erected this division of the Papilios into a genus called *Ornithoptera*, making the type to be *Papilio helena* of Linnæus, who had discribed it as far back as 1764. In *Icones Ornithopterorum* I have found it necessary to regard the numerous forms of the old world Ornithoptera as naturally constituting 5 Genera; the 5th Genus containing *O. helena* as the type of my genus *Pompeoptera*, and *O. priamus* as the type of my genus *Ornithoptera*.

Mr. W. F. Kirby in his *Handbook to the Order Lepidoptera*, Vol. 2 (1896) reinstates Hübner's name of the whole group *Troides* as the name of my genus *Ornithoptera*, and substitutes *Ornithoptera* as the name of my genus *Pompeoptera* — in each case basing his action on the law of priority in nomenclature. To this I could not object; and if it were not that I cannot now alter the plan of my *Icones*, I would gladly follow Mr. Kirby's plan in this record, for the sake of uniformity, and to dispose of all objections.

In the *Icones* I erect Hübner's *Troides* into a Tribe — the 5th of the subfamily *Papilioninæ;* but for the sake of uniformity in the *Genera Insectorum* of Mr. P. Wytsman, I record it here as the *section Troides*. The Hon. W. Rothschild in his fine *Review of the Eastern Papilionidæ* published in *Novitates Zoologicæ* (1895) only admits one genus for the whole group — the genus *Troides*. In my *Icones* and in this record will be found my reasons for creating or admitting so many genera. In the former work at the end of the 2nd volume will be found also, in due time, my proposals for the addition to the section *Troides* of 3 or 4 genera of the Red and Black, Green, and Black Red and Green Papilios, under the tribe *Ornithopterina*.

The earliest species of *Troides* of which we appear to have any record was *O. priamus*, the type of my 3rd genus — the largest and most fully characteristic form of the section. This was by Vincentius in 1719. It was again recorded by Musei in 1742, by Aubenton (♂) in 1745, Seba (♀) in 1765 and Linnæus

in 1758. The first 4 authors all give Amboina as its habitat. Hübner in 1816 named it *Troides priamus*, and Boisduval in 1832 *Ornithoptera priamus;* Mr. Kirby in 1871 called it *Papilio priamus*, then *Troides priamus* in 1896, and Mr. W. Rothschild *Troides priamus* in 1895.

Section TROIDES, Hübner

Troides. Hübner, Verz. bek. Schmett. p. 87 (1816).
Ornithoptera. Boisduval, Faune de l'Océanie, pl. 4, f. 1 (1833).
Amphrysius. Swainson, Zool. Ill. 2d ser. pl. 98 (1833).
Ornithopterus. Westwood, Intr. mod. Classif. Ins. Vol. 2, p. 348 (1840).
Pachlioptera. (part), Reakirt, Proc. Ent. Soc. Philad. Vol. 3, p. 504 (1864).
Papilio. Kirby, Syst. Cat. diurn. Lepid. p. 517 (1871).
Papilio. (subgenus). Distant, Rhop. Malay. Vol. 1, p. 32 (1887).
Troides. Rothschild, Novit. Zool. Vol. 2, p. 183 (1895).
Troides. (tribe). Rippon, Icones Ornith. Vol. 1, p. 9 (1898).

General Characters. — Head prominent; eyes large and rounded; maxillæ of moderate length; labial palpi short, almost concealed by the long hairs or pulvilli; antennæ varying in length in different genera, and in the stoutness of the apex or club; generally the same length as the abdomen, with from 44 to 52 articulations; prothorax distinctly defined; legs strong, elongate; anterior tibia with a very stout spur; tarsi with 1st joint about equal in length to be other 4; ungue simple and strong; abdomen stout, the anal annulus of ♂ furnished with 2 large coriaceous valves; anal terminus of ♀ with a dense tuft of hair-scales, which under general conditions conceal the vulva. Anterior wings elongate, triangulate, powerful; generally large. Posterior wings small in proportion, sub-triangulate; costa arcuate; outer margin dentate.

KEY OF THE GENERA

1. — *Anterior wing* (♂) *without pupaform stigma* . . . . . Drurya, *Aurivillius.*
— — . . . . . Schoenbergia, *Pagenstecher.*
— — . . . . . Trogonoptera, *Rippon.*
— — . . . . . Pompeoptera, *Rippon.*
a. — *With abdominal-marginal fringe of long hairs* . . . . . Schoenbergia paradisea, *Pagenstecher;* Schoenbergia meridionalis, *Rothschild.*
— —
— —
b. — *Without the abnormally long-haired fringe* . . . . . Schoenbergia Tithonus, *De Haan*
— — . . . . . Schoenbergia Goliath, *Oberthür.*
2. — *Anterior wing of* ♂ *with pupaform stigma* . . . . . Ornithoptera, *Boisduval,*
— — . . . . . Æthoptera, *Rippon.*
a. — *Anterior wing of* ♂ *with abdominal-marginal pouch or fold, concealing the androconia or* (*supposed*) *scent scales* . . . . Trogonoptera, *Rippon,*
— — . . . . Pompeoptera, *Rippon.*
3. — *Head; villose tuft with white dots* . . . . . Drurya, *Aurivillius.*
a. — *Without white dots* . . . . . *All the other genera.*
b. — *Eyes strongly underlined with white* . . . . . Schoenbergia.
c. — *Eyes faintly underlined* . . . . . *All the other genera.*
4. — *Antenna as long as the abdomen in both sexes* . . . . . Drurya zalmoxis, Ornithoptera.
a. — *Nearly as long as the abdomen* . . . . . Trogonoptera, Pompeoptera.
b. — *2-3rds the length of abdomen, and strongly clubbed* . . . . Drurya antimachus.

5. — *Legs, femur yellow or white* . . . . . SCHOENBERGIA (except TITHONUS ♂ ♀) SCH. GOLIATH ♀, & DRURYA.

a. — *Brown or black* . . . . . *All other genera.*

6. — *Thorax, with dorsal and pectoral white dots* . . . . . DRURYA.

a. — *With longitudinal green marks* . . . . . SCHOENBERGIA, ORNITHOPTERA.

b. — *Without longitudinal green marks* . . . . . ÆTHEOPTERA, TROGONOPTERA & POMPEOPTERA.

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c. — *With red pronotal collar* . . . . . O. RICHMONDIA ♀, O. POSEIDON var.; O. URVILLIANA, var.,

— TROGONOPTERA, POMPEOPTERA.

— —

A 1. *with pronotal yellow collar* . . . . . POMPEOPTERA FLAVICOLLIS.

d. — *Thorax with pectoral red patch* . . . . . SCHOENBERGIA, ORNITHOPTERA,

— TROGONOPTERA, POMPEOPTERA.

— —

A 2. *without pectoral red patch.* . . . . . POMPEOPTERA AMPHRYSUS & *var.*; POMPEOPTERA MIRANDA.

— —

— *Wings, anterior rather longer and narrower in proportion to the posterior* SCHOENBERGIA & ÆTHEOPTERA.

a. — *Pseudoneura very prominent in the cell of posterior wings* . . DRURYA ♂ ♀.

b. — *Very prominent in the cell of anterior wing* . . . . . POMPEOPTERA ♀.

c. — *♂ Sufficiently prominent* . . . . . ORNITHOPTERA, TROGONOPTERA (♂ ♀).

7. — *Costa nearly straight* . . . . . SCHOENBERGIA; ♂ ÆTHEOPTERA ♂.

a. — *More or less arcuate in all other genera.*

8. — *Inner margin of the anal angle deeply incised* . . . . . ÆTHEOPTERA ♂; *much less but more abruptly in* SCHOENBERGIA PARADISEA ♂.

9. — *With abdominal marginal fringe short* . . . . . ORNITHOPTERA & *all succeeding genera.*

a. — *The fringe absent in both sexes.* . . . . . DRURYA.

10. — *The sexes resemble each other and are acræoid.* . . . . . DRURYA.

a. — *Unlike each other, the ♀ ♀ suggestively acræoid.* . . . . . SCHOENBERGIA, ORNITHOPTERA.

b. — *Somewhat like each other* . . . . . TROGONOPTERA, POMPEOPTERA.

c. — *The ♀ acræoid* . . . . . O. LYDIUS.

A 1. *the ♀ ♀ smaller than the ♂ ♂* . . . . . DRURYA.

A 2. *the ♀ ♀ larger than the ♂ ♂* . . . . . SCHOENBERGIA, ORNITHOPTERA.

A 3. *the ♀ ♀ much larger than the ♂ ♂* . . . . . ÆTHEOPTERA, (*sometimes*) POMPEOPTERA.

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A 4. *the ♀ ♀ nearly equal size to the ♂ ♂* . . . . . TROGONOPTERA.

11. — *Wings, posterior wing tailed* . . . . . SCHOENBERGIA PARADISEA, SCH. MERIDIONALIS.

12. — *Abdomen anal valves of ♂ large, oval or rounded rhomboid.* . . *All genera but* TROGONOPTERA POMPEOPTERA.

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a. — *Valves rotundo — triangular, or more regularly rhomboidal, sometimes terminating at the tips with a projecting minute horny point, which bends inwards towards the opposite valve* . . . POMPEOPTERA, *most species.*

b. — *Valves small, sub-circular, with irregular projections* . . . TROGONOPTERA.

The Larvæ of all genera (at least excepting *Drurya*) are tuberculate, rather short and robust, with generally 7 or 8 rows of slightly curved long fleshy spines and a number of finer, sharper spines in the segmental lines; with 2 bifid defensive nuchal retractile horns, enclosed in an external case; capable of

being suddenly protruded and of emitting an unpleasant odour when alarmed; these are red in colour, their effects possibly corosive, and are probably intended to drive off small Hymenopterous parasites, which Davidson and Aitken inform us (Journ. Bombay Nat. Hist. Soc. 1897) emerge from the living larvæ and form white cocoons on their sides. It also drives off ants by swinging its head round, with the tentacle extruded.

The Pupæ are irregularly curved on the dorsum in the greater part of its outline towards its abdominal termination; the subdorsum is irregularly curved, tuberculate and angulate; suspended head downwards by a plexus of silken threads from the tail, and retained in a steady position by 2 strong silky threads from each side of the thoracic part of the chrysalid, which moor it firmly to the object (generally a branch of a shrub) to which it is attached. There is little variation in the larvæ of the different species, which are somewhat slow in movement. The pupa stage lasts from 4 weeks to probably a slightly longer period.

1. Genus DRURYA, Aurivillius

Papilio. Drury, Ill. Exot. Ent. pl. 1 (1782).

Drurya. Aurivillius, (Fjärilar från Gaboon) Ent. Tidskr. p. 44 (1880); Rippon, Icones Ornith. Vol. 1, p. 4 (1892).

Characters. — Male, Head — Antennæ of moderate length; club gradually formed, rather more obtuse at the summit than in Papilio; head broader in *D. zalmoxis* than in *D. antimachus;* palpi very short, hidden by the rather long-pointed and prominent tuft of hairs in *D. antimachus*, less so in *Zalmoxis;* pronotum well developed; thorax normal in size and form, spotted white as in the Danainæ; abdomen long and graceful in *D. antimachus*, extending beyond the posterior wings; shorter and stouter in *D. zalmoxis;* anal valves of ♂ smaller than in other genera; legs longer in *D. antimachus* than in *D. zalmoxis*, with femora and trochanters of each light coloured.

Anterior Wings. Costa much elongated, sufficiently arcuate in *D. antimachus;* less long and a little more convex in *D. zalmoxis;* exterior margin strongly concave from the terminal of the discoidal radial; apical angle much rounded and very obtuse; interior margin a straight line, incurved towards the base in *D. antimachus;* very concave and less incurved at the base in *D. zalmoxis;* anal angle slightly round; 3rd subcostal radial emitted just before the distal end of the cell.

Posterior Wings shorter, rounded (especially in *D. zalmoxis*), slightly dentate; costal margin entirely straight in *D. antimachus*, less so in *D. zalmoxis;* abdominal margin not folded or concave in *D. antimachus* ♂ ♀, but slightly so in *D. zalmoxis* ♀. Similar in outline and pattern to the ♂, but smaller in *D. antimachus;* pattern of both surfaces acræoid.

Male anterior Wings of *D. antimachus* (the type species). Cell dark orange-red, with 2 transverse broad fascia, one of which is sometimes quite surrounded by the red and at the distal end; immediately outside the median vein are 4 black marks of various sizes and shapes; close outside the 1st and 3rd discocellular radials are 2 moderately sized lighter marks, the lowest being the longest; between the 2d and 3rd subcostal radials is a light space; a large light coloured mark between the 3rd and 4th, a large suboval light orange mark between the 5th subcostal and discoidal, and another between the discoidal and 1st median radials, followed by 4 large variously shaped arrow-headed or sub-crescentic orange marks in the other veinal spaces till the inner marginal area is reached, which contains two long bars of orange, only narrowly separated from each other — that nearest the base being the broadest and largest; outside this band of marks are 8 narrow streaks of pale orange, of various lengths, situate on the disc from the 3rd subcostal to the 1st median radials; these are really separated by the folds and nervules of the wing; in some examples they are very faint, in other quite absent; hind margin with 4 light fringe lunules.

Posterior wings brick red; hind margin dentate with clay-coloured crescents; a broad submarginal dark band sharply dentate towards the cell; a discal row of 7 large black spots from the inner to the costal margins, in an irregular curve; a large black spot at the distal end of the cell, and just outside of it; veins and pseudoneura black. Arrangement similar on the under surface of both wings, but the colours are ochraceous yellow, red, bluish grey and black; abdomen also ochraceous yellow, with longitudinal dorsal stripe of brown. The ♀ resembles the ♂; except in being smaller.

The ♂ of *D. zalmoxis*, both wings greenish silky blue; margins, nervules and internervular rays black; apex of anterior wing broadly black; posterior wing, outer margin broadly black with a submarginal band of 12 green-blue spots in pairs; abdomen orange; under surface with nervures and rays between them black. Anterior wings, grey-white; apex broadly rufous-brown; posterior wing rufous-brown; base orange, with very black nervures; cell with pseudoneura black, and a portion of the abdominal margin white, outer margin with narrow border of black; submarginal spots as above but white. The ♀ similar, but much bluer on the upper surfaces, and the base and abdominal margin brightened with light hairs.

Geographical Distribution of Species :

1. *Drurya antimachus*, Drurya, Ill. Exot. Ent. Vol. 3, pl. 1 (1782), the type species. (Sierra Leone, Crèek Town; Old Calabar; Ambas Bay; North Cameroons; Sherboro' River near Sierra Leone; 3° East of the Mouth of the River Ogowai — French Congo; Yambuya, Aruwimi River — a tributary of the Congo — and many other localities up the River; Stanley Falls; thereby giving this species an approximate range of 9°30′ N. lat. by 1° 0′ S. lat. and 13° 0′ W. by 11° 0′ E. longitudes).
2. *D. zalmoxis*, Hewitson, Ill. Exot. Butt. Vol. 3, p. 6, pl. 1, f. 18 (1862). (Ranges from Old Calabar to Kabinda, N. of the Mouth of the Congo; Angola, S. of the same River, or lat. 8°20′ to 9°30′ S. and long. 14° 0′ to 19° 0′ E.; common at Stanley Falls and on the Island of Fernando-Po.
   a. *Green var.* (Mongalla, on the Congo);
   b. *Grey var.* (Bangala, Kassai, Umangi, on the Congo). The species may probably yet be found up the Niger.

2. Genus SCHOENBERGIA, Pagenstecher

Schoenbergia (subgenus). Pagenstecher, Jahrb. Nass. Ver. Naturk., p. 83 (1893).
Schoenbergia (genus). Rippon, Icones Ornith. Vol. 1, p. 9 (1894).
Troides. Rothschild, Novit. Zool. Vol. 3, p. 194 (1895).

Characters. — Male anterior wings subtriangular or almost quadrilateral — the base being the shortest side; costa moderately arcuate; outer or hind margin more or less unequally convex; interior or abdominal margin straight.

Posterior wings smaller in proportion; costa sufficiently arcuate and short; hind and inner margins long, almost straight; somewhat incised at the anal angle; folded over, except in *S. meridionalis;* with a dense line of vivid white, or sienna like hairs in *S. paradisea* and *S. meridionalis*, which nearly encloses the abdomen when the insect is resting; with a less long fringe in the other species; the 3rd median radial produced in a long curved tail in *S. paradisea* and a delicate thread-like tail, terminated by a small leaf-like spatule in *S. meridionalis*, without tails in the other species; discoidal cell long — the nervules beyond very short, but longer and more normal in the other species.

Anterior Wings above black, with broad subcostal very golden green stripe, extending narrowly, from near the base to the apex; divided from a very broad discal golden-green area that extends a good way up the disc by the velvety black of the wing (in *S. meridionalis*); the two areas of golden green are united by green atoms on the hind margin; a narrow submedian golden green stripe from the base to the edge of hind wing.

Posterior Wing: the cell and a large discal area silky golden yellow, followed by a rich apple-green marginal band, which in *S. meridionalis* extends entirely to the hind margin; a narrow green band within the cell in *S. paradisea*, extending a little below the median nervure or broken up into lines outside the median to the abdominal margin in *S. meridionalis;* in *S. tithonus* 1-3rd of the cell is encroached upon by the green submedian area.

Head and Thorax black, in some species with a green or yellow dorsal mark on the thorax; abdomen vivid golden, or lemon yellow, with or without a central longitudinal black stripe, broken into lines of white.

Underside of anterior Wings vivid yellow or silky green yellow and black, varying in extent and position — the veins prominently black; posterior wing golden yellow and vivid golden apple-green; hind margin only faintly, or not at all, black; in *S. tithonus* both surfaces of posterior wing with, above 4 nearly equal-sized discal suborbicular black spots; and beneath 1 black orbicle at the distal end of the cell, 4 nearly equal-sized black-orbicles on the disc, also 2 or 3 atomic black spots in addition.

Female anterior Wings. Median nervure with 4 radials; 3rd subcostal originates at the end of the cell; wing surface brown-black, with 2 bands of brown-white marks varying a little in size, shape, and number in different species, and in an indefinable way resembling the ♀ wings of the genus *Ornithoptera*, though abundantly distinct; the same observation applies equally to the arrangements of the posterior wing-marks which consist of a pale discal band, occupying the lower half of the wing, much incurved towards the costa, containing generally 5 black orbicles; the outer area of this band yellow or brownish ochre, sometimes rendered sordid by black atoms; undersurfaces of wings as above, except that the yellow parts are purer and richer in tint. Head and thorax black; in *S. goliath,* with dorsal green mark; abdomen light grey; legs large and long, ♂ with yellow or white femora in the type species. Expanse of wings in ♂ from 59 to 74 or 80 mms.; in ♀ from 79 to 125 mms. *S. goliath* of Oberthur is the largest species (probably) in both sexes.

Geographical Distribution of Species. — Waigieu and New Guinea.

1. *Schoenbergia paradisea*, Pagenstecher, Jahrb. Nassau Ver. Naturk. Vol. 6, p. 380 (1894) (Sattleberg, Finisterre Mountains, German N. Guinea;
   a. var. *flavescens*, Rothschild, Novit. Zool. Vol. 6, p. 180, n° 2 (1897); Etna Bay, N. W. Coast of Dutch N. Guinea;
   b. var. *punctata*, Rothschild, Mss. name; but described in Rippon's Icones Ornith. Vol. 1, p. XX, pl. IVa f. 5-6 (1899) (1) (Erima, Astrolabe Bay, German territory).
2. *Sch. meridionalis*, Rothschild, Novit. Zool. Vol. 6, p. 180, n° 3 (1897) (Mailu, British New Guinea).
3. *Sch. tithonus* (type), De Haan, Verh. naturl. Gesch. Nederl. Bezeltingen, p. 18, pl. 1, f. 2 (1841) Kapaur Western Province of Onin, Dutch territory;
   a. var. *waigiuensis*, Rothschild, Novit. Zool. Vol. 6, p. 179, n° 1 (1897) (Island of Waigieu, 340 miles N. W. of Kapaur, and separated from the type by 2 Islands, the entire Arfak portion of New Guinea, and the Mc Cluer inlet.
4. *Sch. goliath*, Oberthur, Etudes d'Entom. Livr. 19, p. 2 (1888) and the wonderful new ♂ of this species at present enjoing the different names of *titan,* Grose Smith, Ann. Mag. Nat. Hist., Vol. 6, p. 788 (1900); *supremus*, Röber, Ent. Nachr. Vol. 22, p. 269 (1896) and *elizabethæ-reginæ*, Horvath & Mocsary, Termész. Füz., Vol. 12, p. 114 (1899) (Mailu, British New Guinea).

The Butterflies of the 2 genera *Schoenbergia* and *Ætheoptera*, because they surpass the beauties of the Morphos of the New World, and equal the gorgeousness of the Birds of Paradise, should be called the *Butterflies of Paradise.*

3. Genus ORNITHOPTERA, Boisduval

Troides. Hübner, Verz. bek. Schmett, p. 87 (1816).

(1) This form is, according to Mr. Rothschild's letter to me, only a crippled aberration of *Sch. paradisea;* bred by Dr. Hagen from eggs laid by a normal male at Constantine Hafen.

Ornithoptera. Boisduval, Voy. Astrolabe. Lépid. p. 33 (1832).
Amphrysius. Swainson, Zool. Ill. 2n d. ser. pl. 98 (1833).
Ornithopterus. Westwood, Iut. Mod. Class. Ins. Vol. 2, p. 348 (1840).
Pachlioptera. Reakirt, Proc. Ent. Soc. Philad. Vol. 3, p. 504 (1864).
Papilio. Kirby, Syst. Cat. diurn. Lepid. p. 517 (1871).
Ornithoptera (subgenus). Distant, Rhop. Malay. Vol. 1, pl. 32 (1887).
Ornithoptera. Rippon, Icon. Ornith. Vol. 1, p. 1 (1891).
Troides. Rothschild, Novit. Zool. Vol. 2, p. 183 (1895).

Characters. — This genus differs very little from *Papilio* in general wing structure, but is sufficiently distinct.

Male anterior Wing : 3rd submedian radial emitted at from 2 to 5 or mms below the apex of discoidal cell; cell long and broad at distal end, diminishing to a point at the base; pseudoneura 4, branching from basal stem within the cell and running parallal to each other, with slight variations of direction in different species; a pupaform stigma on the disc below the median nervure.

Posterior Wing : precostal nervure 2 branched, the inner branch bends downward and unites to the costal nervure; abdominal margin fringed with rather long sienna-brown hairs, which fold over and across the abdomen, or laterally and beneath it; abdominal margin folded over upwards — the hair fringe beneath proceeding along the line of the submedian nervure.

Male anterior Wing velvety black; a green or golden-green subcostal vitta or band from the base to apical angles narrow at base, occupying a portion of the cell, broadest beyond the cell, and narrowing towards the apical angle; a narrow green band from base above the inner margin, curving round and running parallel with 2-3 rds or more of hind margin, sometimes nearly united with the subcostal band by atomic spots of green (the green always shot in certain positions with opalescent reflections); median nervure and radials in all the forms of *O. pegasus*, *O. poseidon* and *O. aruana* and occasionally in others except *O. priamus*, indicated more or less by green scaling (sometimes the whole wing shows a tendency to become entirely green (see pl. 6 Icones Ornith.); general character of wing pattern the same in all species, except *O. cræsus* and *O. lydius*, when the subcostal and the inner marginal bands are very broad, and not continued along the hind margin, and the bands are golden-orange. Undersurface, with a varying extent of the cell golden or bluish-green, with broad discal tranverse band of golden-green, nearly divided by black narrow bands on the outer side, also broadly divided by the black of the nervules, giving it the character of a band of large rectangular marks, the 2 upper being generally only narrow lines of green atoms; the extent of black is greatest in the type species, and least in *O. pegasus*. The colours of the upper surface are always green or golden-green with the following exceptions : *O. cumæus*, Rippon, (green-blue); *O. cræsus*, Wallace and *O. lydius*, Felder (golden fiery orange); *O. Urvilliana*, Guérin (violet, peacock blue-green, purple, blue, but the var. *Bornemanni*, Pagenstecher is green); the undersurface with varying combinations of green, blue or violet. Posterior wings golden green with or without a curved discal row of black orbicles, varying from 5 to in 2 the different species; margins black, broadest in the type species, with sometimes a golden discal spot or two. Undersurface green, with a more or less broad black margin, and a curved discal band of 6 or 7 black orbicles, and sometimes a black submedian patch. In *O. cræsus* the silky-golden marks are not prominent or numerous; in *O. Urvilliana* the cell and disc are shaded violet, and on the outer side of the orbicles often golden green, with a curved row of silky golden submarginal spots.

Female anterior Wings : dark or warm brown; cell of type species and those mentioned in the *Synopsis* immaculate; a broad discal band of more or less pure white marks, incurving towards the costa — divided broadly by the veins and their dark margins, and these again bisected by the black band running transversely beween them up 2-3rds of the disc, producing thereby a double row of marks,

which exhibit in the different examples and species every gradation of size and shape, or none at all; a white cell spot (never or rarely found in the type) also varies from a large homogenous mark to a group of divided (or small obsolete) marks.

Posterior Wing : dark warm brown, or brown-black; with a discal broad band of light internervular marks, divided by suborbicular, hastate or cunieform black spots more or less large; the outer portions of these light marks are yellow-ochre, subdivided by dark scales (or atoms). Undersurface of all the wings as above, except that the marks are generally larger and the ochraceous yellow of the upper-surface is replaced by rich yellow, of which colour the marginal lunations partake. The exception to the foregoing is the ♂ anterior wings of both surfaces of *O. lydius*, in which the cell is white; the discal band of white occupies nearly the whole area, divided by the veins into separate marks, and concave on their outerside, and a second or submarginal band of smaller marks sublunate, incurving towards the costa, where the last 3 become larger, completes the pattern on a dark brown ground, giving the wing an *Acræoid* appearence; the posterior wing on both surfaces is brownish ochraceous yellow — the bases, nervures, a submarginal band of nearly-connected subtriangulate spots, and the hind margin brown-black; on the under side the light submarginal area of the wing is yellow; the abdomen partakes of the same character and colours as the wing.

Geographical Distribution of Species. — Ranging from Molucca Islands to New Guinea and Australia.

1. *Ornithoptera priamus*, Linnæus, Syst. Nat. (ed. X), p. 458, nº 1 (1785) (Ceram Archipelago, Amboina, Ceram, Ceram Laut, Saparua).
2. *O. cræsus*, Wallace, Proc. Ent. Soc. Lond. (2), Vol. 5, p. 70 (1859) (Molucca Islands, Batjan, Ternate, Djilolo, and (bred specimens) Amboina).
3. *O. lydius*, Felder, Lepid. Novara Reise, Vol. 1, p. 9, n. 5, pl. 3 f. a, b (1865) (Djilolo, Batjan (?).
4. *O. euphorion*, Gray, Cat. Lepid. Brit. Mus. Vol. 1, p. 4, pl. 6 (1852) (Australia, Queensland — from Makay and the Pioneer River on the E. Coast to Cooktown near the Norma River, or over a line of Coast 380 miles from North to South.
5. *O. Richmondia*, Gray, Cat. Lepid. British Museum, Part. 1, p. 2, nº 2, f. 1-2 (1852) (Richmond River, and all the Northern Rivers of New South Wales, till Clarence River is reached; also in Southern Queensland).
6. *O. pegasus*, Felder, Lepid. Novara Reise, Vol. 1, p. 6, nº 4, pl. 2 f. a, b (1865) (Northern and Western Coasts of New Guinea; Humboldt Bay (Dutch Territory), D'Entrecasteaux Islands, Possession Bay, Kei Islands, Fergusson Island, Dorey);
   a. var. *Kirschi*, Oberthur, Etudes d'Ent. (Cat. rais. de Pap. de la Coll. de Ch. Oberthür, (as vars. of *O. Pegasus*, without names, Kirsch describes two forms (one of them being the insect called by Oberthür *Kirschi* in Mitth. Zool. Mus. Dresden, Heft 2, pp. 108-109, pl. 5, f. 1-2 ♂ (1877). (Amberbaki Dutch Territory, New Guinea, Mysol, Salawatti).
7. *O. poseidon*, Doubleday, Ann. Mag. Nat. Hist. Vol. 18, p. 173 (1847) (including synonyms *pronomus*, *archidius* (Darnley Islands, Cape York, North Australia, Torres Straits, Thursday Island, Kei Islands, Tenimber Islands, D'Entrecasteaux Islands, Arfak Mountains (New Guinea) Dorey, Duke of York Island, Wokau, Waigiu, N. W. Australia, Russell River near Cairns, Port Denison, Queensland;
   Hypothetical varieties :
   a. var. *cronius*, Felder, Verh. Zool. bot. Ges. Wien, Vol. 14, p. 290, nº 42, p. 332, nº 9 (1864) (New Guinea);
   b. var. *triton*, Felder, idem, p. 290, nº 16, p. 332, nº 12 (1856) (Rawak);
   c. var. *Boisduvali*, Montrouzier, Ann. Soc. Phys. Nat. Lyon, p. 394 (1856) (Woodlack Island);
   d. var. *hecuba*, Röder, Tijds. v. Ent. Vol. 34 (1891) (Kei Islands);
   e. var. *oceanus*, Felder, Verh. Zool. bot. Ges. Wien, Vol. 14, p. 290, nº 13, p. 332, nº 10 (1864) (Aru Islands);
   f. var. *brunneus*, Rothschild, Novit. Zool. Vol. 2, p. 189 (1895) (Stephansort, New Guinea : Fergusson Island).

8. *O. aruana*, Felder, Wien. Ent. Mon. Vol. 3, p. 391, nº 32 (1860) (Aru Islands, Wokau, Louisiade Archipelago, D'Entrecasteaux Islands, Kiriwina (Trobriand Isles) and New Britain;
   a. var. *eumæus*, Rippon, Ann. Nat. Hist. p. 193 (1892) (Aru Islands);
   b. var. *valentina*, Vuillot, Bull. Soc. Ent. France, p. 124 (1892) based on dwarfed examples of *O. aruana* (Port Moresby).
9. *O. crœsus*, Wallace, Proc. Ent. Soc. Lond. (2), Vol. 5, p. 70 (1859) (Batjan, Amboina).
10. *O. lydius*, Felder, Lepid. Novara Reise, Vol. 1, p. 9, nº 5, pl. 3 f. 6 (1865) (Djilolo, Halmaheira).
11. *O. Urvilliana*, Guérin, Voyage de la Coquille, Entom. pl. 13, f. 1-2 (1829) (Duke of York Island, New Britain, New Ireland (green-blue forms); Solomon Islands, New Hanover, Florida Isle, Aola, Guadalcanar, Fauro Isle, New Guinea);
   a. var. *Bornemannii*, Pagenstecher, Jahrb. Nass. Ver. Naturk. p. 65, pl. 2-3, f. 2 (♂) (1894) New Britain);
   b. var. *cælestis*, Rothschild, Novit. Zool. Vol. 5, p. 216 (1898) (St-Aignan (Misomay) Isle, Louisiade Archipelago).

Probable number of good species: 1. *O. priamus*, (the type); 2. *O. Richmondia* including *O. euphorion*; 3. *O. poseidon* including *O. pegasus* to *O. aruana*; 4. *O. crœsus*; 5. *O. lydius*; 6. *O. Urvilliana*; 7. probably *O. Urvilliana*, var. *cælestis* is a distinct species.

4. Genus ÆTHEOPTERA, Rippon

Ætheoptera. Rippon, Icones Ornith. Vol. 1, p. 47 (1894).
Troides. Rothschild, Novit. Zool. Vol. 2, p. 196, nº 6, p. 197 (1895).

Characters. — Male, anterior Wing long, narrow, apical angle acute; anal angle imperceptible or non-existent, the posterior and anterior margins being united by a continuous curve to the apex; costa slightly arcuate; 3rd subcostal radial originates at the end of the cell; the 2nd to 4th median radials very close to each other, and somewhat bent in passing through the area of the long and narrow pupaform stigma. Posterior wing narrow, elongate; inner margin deeply incised to nearly a 3rd of the wing length — thereby shortening the submedian nervure; abdominal marginal fold extends from anal angle to base — the line of ciliæ proceeding alone the submedian nervure on the underside of this fold are very prominent, this fold includes the androconia, or scent scales.

Female anterior Wing larger than the ♂; costa more arcuate; apical angle acute; hind margin long and slightly concave midway; subcostal 3rd radial originates at the end of the cell; inner margin short and nearly straight. Posterior wings very long; hind margin broadly lunate between the veins; nervures stout; precostal cell long and narrow; discoidal cell less than 1/2 the length of wing. Head, antenna and thorax black and very prominent; abdomen ochraceous grey, with black triangulate mark on the anal articulation; subdorsum, articulations partly black, with minute black lateral dots; anal valves yellow; the black of the abdomen is in some examples extensive. ♀ Head and thorax black; abdomen grey-white, subdorsum yellow, articulations well marked with black, a row of lateral black dots on each side between the articulations; anal vent red-brown.

The type is *Æ. Victoria* Gray ♀, Salvin ♂. Male anterior wings velvety black; a subapical subtriangulate patch golden green, divided by the veins into 3 parts; a large patch of golden occupies a little less than half the wing extending to within 1/2 an inch of the end of the cell. Posterior wing golden shaded into deep bluish-green, subdivided by black atoms over the distal half of the cell and wing (in *Æ. regina* nearly or quite black); a submarginal narrow band of greenish golden-yellow, whereof the 3 divisions nearest the anal angle have a central spot of silky golden-yellow; outer and inner margins black. Underside of anterior wing, veins, margins, and large subtriangular patch over the end of cell black; hind margin with 6 or 7 green spots running parallel — the lower 3 being merely thin lines of green on the outer area of the stigmatic brand (which show through the wing from the upperside). Posterior wing

golden-green, with veins, a very thin margin, and 4 or 5 marks at the end of each nervule, black, and 2 or 3 tetrahedronal small spots.

Female anterior wing, brown black; marks at base of cell, and submedian nervure yellow, but white towards the distal end — sometimes separated by a black bar, or black atoms; a discal and submarginal row of irregular shaped white marks. Posterior wings with a discal band of 7 marks between the veins — the subcostal or 1st, and the 5th and 6th being the largest, and strongly concave on their outer side — these are white, but the 1st is suffused with yellow and encloses a black spot, and the lower only faintly yellow; a row of white lunate spots running parallel to the outer margin and 2 basal streaks of yellow atoms. Undersides similar, except that the area of the posterior subcostal and costal yellow is greater, and the light marks of both wings are more or less suffused with yellow.

Geographical Distribution of Species :

1. *Ætheoptera Victoria*, Gray, Proc. Zool. Soc. Lond. p. 7, pl. 39 (1856) Wanderer Bay, Guadalcanar, Shortland-Island; Rubiana Lagoon islets; New Georgia (?), Alu Isle, Bougainville, Solomon Islands).
2. *Æ. regina*, Salvin, Proc. Zool. Soc. London, Vol. 20, p. 117 (1888) (Maleita, N. W. Bay, Solomon Islands).
3. *Æ. regis*, Rothschild, The Entomologist, Vol. 38, p. 73 (1895), Novit. Zool. Vol. 2, p. 197 (1895) (Alu, Shortland, Bongainville, Solomon Islands (Rippon, Icones Ornith. Vol. 1, p. 57, pl. 20 (1901) The two later are probably only local variations of the type species.

5. Genus TROGONOPTERA, Rippon

Trogonoptera. Rippon, Icones Ornith. Vol. 2, p. 1 (1890).

Characters. — Male anterior Wings elongate, subtriangulate, somewhat tumid at the base, slightly arcuate, longer and narrower than in the *Genus Schoenbergia;* rounded at the apex; posterior margin nearly straight; inner margin also nearly straight; discoidal cell elongate and narrow — considerably longer than half the length of the costa; all the veins nearly straight, median and subcostal nervures only moderately robust; distance between the basal junction of the radials of subcostal nervure greater than in other genera; 3rd subcostal radial in both sexes originating at distal end of cell; *pseudoneura* all starting from base, appear to be divided into 2 stems as in the *Pompeoptera*, each with 2 branches (Icones Ornith. Vol. 2, p. 1). Posterior Wings slightly oval — smaller in proportion to those of other genera, and dentated; discoidal cell narrow, but shorter proportionally than in anterior wing; without lunate spots or lines between the vein terminals; the fringe as in the anterior wing merely a delicate whitish thin marginal line; abdominal marginal fold concealing the *androconia*. Head and eyes slightly larger than in other genera; villose covering of palpi slightly longer than in other genera; pronotal red collar more than twice as broad as in other genera, and divided by a faint line of black at nearest to the head; thorax stout and black; outlines of the head invisible. ♀ Anterior wings with little or no difference from ♂ except that the interno-median radial is not quite so long as in the ♂.

The type species *T. Brookeana* Wallace. ♂ anterior wing with a discal submarginal row of 7 leaf-like or feather-shaped marks, golden (opalescent) green, intersected by the nervures. Posterior wing with the centre of the cell and disc opalescent or brass-green, bordered with blue. Underside of anterior wing warm brown-black; space between the costal and subcostal nervures with a short blue line; a discal transverse row of green bifid marks, suffused towards the cell with blue; 2 submarginal elongate pinkish white spots divided by the nervules and elongate. Posterior wings, underside black; a blue basal spot; 3 blue-green spots outside the pre-costal nervure; one subcostal (the longest) one at base of cell, and one submedian with its inner portion scarlet; a row of 4 narrow oval light discal spots bisected by the 4 middle veins; a band of submarginal white obliquely-square marks, also bisected. Thorax with

pectoral red patches; abdomen, greenish silky brown; legs long and slender. ♀ Anterior wing black; a discal band of broad narrow marks, bisected by the veins, curved inwardly towards the costa — the upper being very broad. Posterior wings with the cell and greater part of the disc golden green, suffused at the base and outer edges with rich ultramarine blue; and a submarginal narrow band of marks as on the underside — the first 3 from the apical angle white, the remainder faint red-brown. Underside of anterior wings with discal band of marks similar to that of upperside, but all white; costal blue streak the same as above; the cell with large irregular-shaped area of brilliant green, with blue towards the base, occupying the centre of the cell, and continued by 4 discal green marks parallel to the median nervure also suffused with blue on the inner side. Underside of posterior wings like that of the ♂.

A variety of the ♀ (var. *eleanor* Walker) resembles the ♂ above, but the ♀ beneath.

Geographical Distribution of Species :

1. *Trogonoptera Brookeana*, (type) Wallace, Trans. Ent. Soc. Lond., Ser. 2, Vol. 3, p. 104 (1855) (Sarawak, Sandakan, Banjermasin, (Borneo) Mountains of S. Sumatra, Perak, Malacca, Johore (Sumatra).
   a. *var. eleanor* ♀ Walker, Trans. Ent. Soc. Lond. Pt. 1 (1889) p. 3 (Borneo).
2. *T. Trojana*, Honrath, Berl. Ent. Zeits. Vol. 33, p. 3 (1886) (Palawan, Philippine Archipelago).

6. Genus POMPEOPTERA, Rippon

Pompeoptera. Rippon, Icones Ornith. Vol. 2, p. 44 (1894).
Ornithoptera. Boisduval, Voy. Astrolabe, Lépid. p. 33 (1832).

Characters. — Male anterior Wings. Costa more or less arcuate in different species, long, the apex rather acute — the anterior angle always sufficiently distinct in boundary to prevent the graduation of its outline into that of the hind margin; the posterior or hind margin generally nearly straight, or slightly concave midway, except in the case of *P. Dohertyi*, where it is more irregular; interior margin generally curved in some species, or nearly straight in others, *P. darsius* for example; the 3rd subcostal nervule commences at a short distance from the end of the cell, in some species exactly at the end of the cell; the veins generally prominent, and often more accentuated by their black edging, when bisecting the light adnervular rays, which are generally so prominent in the species of this genus, especially in the ♀♀.

Male posterior Wing rounded; strongly dentate (less so in *P. Dohertyi*); veins generally robust but very delicate and graceful in curvature in *P. amphrysus* and *P. andromache;* abdominal or inner margin concave, with a submarginal fold or pouch containing the *androconia;* (in new examples this pouch is usually closed, or only to be faintly traced by a submedian line : the shape of this fold varies a little in the different species); legs differ little from those of *Ornithoptera;* abdomen often yellow, sometimes yellow and black, or yellow and brown; sometimes brown, and in *var. Honrathiana* entirely black, in *P. hippolytus* black and orange.

Male anterior Wings.

a. — Black or bronzy-black, with white adnervular rays : *P. hippolytus, P. nereis, P. miranda, P. rhadamanthus, P. haliphron, P. cerberus, P. nais, P. minos, P. nephereus.*

b. — Black with yellow adnervular rays : *P. amphrysus* and varieties, *P. magellanus, P. cuneatus* = *P. Ritsemae.*

c. — Black with faint brown adnervular rays : *P. iris, P. Dohertyi* and varieties, *P. Plateni, P. Vandepolli, P. Staudingeri, P. Plato, P. Riedeli.*

d. — Entirely black, or with only slightly traceables rays : *P. pompeus, P. helena* and varieties.

e. — Wing suffused on the black with violet-blue from base to disc : *P. miranda.*

Male posterior Wings.

a. — Black, with submarginal band of sub-tetrahedronal yellow marks, outwardly concave, and

the cell and greater part of disc a semi-transparent oleaginous black-grey : *P.hippolytus* and varieties.

b. — Golden yellow with broad submarginal and interior marginal black : *P. Vandepolli* and variety, *P. Honrathiana*, *P. criton*, *P. helena* and varieties.

c. — Black, with a rather narrow discal yellow band : *P. haliphron*, *P. iris*.

d. — Black, with yellow only occupying part of disc and half the cell : *P. Plato*, *P. Staudingeri*, *P. naias*, *P. Riedeli*.

e. — With narrow submarginal and basal black — the marginal black dentate towards the disc with one or more discal small spots— all the remainder of wing yellow— *P.nereis*, *P.pompeus*, *P.miranda*, *P.andromache*, *P.cerberus*, *P.rhadamanthus* (with black scale internervular cloudings on the lower part of disc.), *P. amphrysis* and varieties (with discal cuneiform black spots also), *P. cuneatus*.

f. — As before, with the yellow area strongly opalescent in certain positions : *P. magellanus*.

g. — The wing black, with only a small patch of yellow extending from the subcostal margin to the 2nd subcostal nervule : *P.Plateni*.

h. — Entirely black : *P.Dohertyi* and varieties.

i. — Wing yellow, with only small marginal black dentations : *P. amphrysus* and varieties.

There are other slight modifications of the above characters.

Female anterior Wings. Costa arcuate, but generally more curved near the apex; posterior margin nearly straight, or only slightly dentate; interior margin nearly straight, less so in some species; 3rd subcostal emitted at a short distance from the end of the cell, in some species quite at the end of the cell; discoidal cell rather more than half the length of the wing, its width slightly varying in the different species. Wing black, with white adnervular rays, and sometimes within the cell at the distal end are white rays or marks.

a. — With ad-pseudo nervular rays : *P.hippolytus*, *P.Honrathiana*, *P.criton*, *P.helena* and varieties, *P. Plateni*, *P. Dohertyi* (faintly).

b. — The distal end of the cell white : *P.pompeus* varieties, *P.nereis*, *P.Vandepolli*, *P.cuneatus*, *P. Plato*, *P. Riedeli*.

c. — The distal end of the cell white with 2 parallel black spatuloid marks : *P. Plateni*, *P. iris*, *P.rhadamanthus*, *P.naias*, *P.hippolytus var. cellularis* and *sulaensis*, *P.Staudingeri*, *P.helena*, *P.darsius*, *P. haliphron*.

d. — With one long black cone bordered with white, occupying all the cell; *P. magellanus*, *P.rhadamanthus* and *P. minos* (in some examples), *P. eacus*.

e. — The whole cell dull white : *P. amphrysus* var. *ruficollis* and *flavicollis*, *P. andromache*.

f. — The cell entirely black or brown : *P.miranda*, almost entirely brown : *P.helena*.

Female posterior Wings. Costa straight or rounded; posterior margin rounded, dentate; abdominal incurved or concave. Head of moderate size; eyes prominent, palpi hidden, antennæ as in the ♂, thorax robust, black, pronotum red or yellow; abdomen long and rather slender — brown or yellow, brown and grey, quite grey, black, with lateral black dots, and ventral black marks; anal tuft dark.

a. — Half the wing, including cell black and brown; the inner half white, with a discal row of large oval black spots : *P. hippolytus* and varieties.

b. — Base and part of the cell a discal band of long nearly attached cones and a broad inter-marginal band, black : *P. Vandepolli* and varieties, *P.rhadamanthus*, *P. cerberus*.

c. — Wing yellow (and opalescent) with discal band of confluent black cones, and band of submarginal black cones : *P. magellanus.*

d. — Upper half of wing including the cell, yellow, the lower half black, with a narrow submarginal band of yellow cuneiform detached spots : *P. amphrysus* and varieties, *P. andromache.*

e. — The basal part of cell black, a confluent band of large discal cones, and a broad intermarginal band black, the remainder of wing yellow : *P. miranda* var., *P. helena.*

f. — Base of cell and lower half wing black, with very narrow band of detached yellow small spots, the remainder of wing yellow : *P. nereis*, *P. cuneatus*, *P. naias.*

g. — The same as above, with the cell nearly or quite black : *P. darsius*, *P. Riedeli.*

h. — The base, 2-3 rds of cell, all the margins, and a discal band of cones black; the remainder yellow : *P. criton.*

i. — All the wing black except 1/4th of the cell and a small discal area of yellow : *P. iris*, *P. Dohertyi* and *varieties.*

j. — Like the preceding, but with a slightly larger area of yellow : *P. Staudingeri*, *P. helena*, *varieties*, and *P. Plateni.*

k. — The disc and greater part of cell yellow, with or without submarginal black spots, and costal margin, part of cell and outer marginal dentate band black : *P. pompeus* and *varieties.*

l. — With wing black, except the almost obsolete yellow cell, discal and submarginal scaled spots : *P. miranda* and varieties.

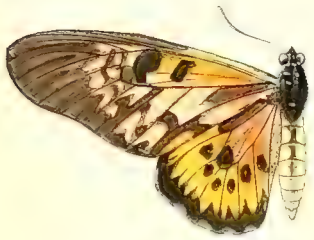
There are many slight varieties and exceptions to the foregoing characters, but these will enable us as a rule to divide and determine many of the species.

Geographical Distribution of Species :

1. *Pompeoptera hippolytus*, Cramer, Pap. Exot. Vol. 1, pl. 10, fig. A.-B. pl. 11, fig. A.-B. (1775) (Amboina, Ceram, Ternate, Djilolo, Morty Island) (Sula Group);
   a. *var. cellularis*, Rothschild, Novit. Zool. Vol. 2, p. 202 (1894) (S. and S. E. Celebes);
   b. *var. celebensis*, Staudinger, Iris, Dresden. Vol. 7, p. 343 (1895) (Celebes).
2. *P. darsius*, Gray, Cat. Lepid. Brit. Mus. Vol. 1, p. 5, nº 11 (1852) (Ceylon).
3. *P. minos*, Cramer, Pap. Exot. Vol. 3, p. 4, pl. 195, f. A. (1779) (Bengal, Trevandrum, Malabar, Bombay, Nilgiri Hills, Travancore, Southern India).
4. *P. Vandepolli*, Snellen, Tijdschr. v. Entom. Vol. 33, p. 22 (1890) (W. Java);
   a. *var. Honrathiana*, Martin, Deuts. Ent. Zeit. Vol. 37, p. 492 (1892) (Mount Batlak, Sumatra).
5. *P. haliphron*, Boisduval, Spec. gén. Lépid., Vol. 1, p. 188, nº 9 (1836) (Celebes, Salayer, Bantimoumg, Kabia Island).
6. *P. naias*, Doherty, Journ. Asiat. Soc. Beng., p. 193, nº 116 (1891) (Sumba, Sumbawa, Wetter, Alor, Engano, Adonara for Staudinger's *var. Socrates*, Iris, Vol. 4, p. 71 (1891).
7. *P. Iris*, Röder, Ent. Nachr., p. 369 (1888) (Letti).
8. *P. Staudingeri*, Röder, idem, p. 369 (1888) (Loeang Island, Babber).
9. *P. Plato*, Wallace, Staudinger, Iris, Vol. 4, p. 74 (1891) (Timor, Oinainisa, Dutch Timor).
10. *P. criton*, Felder, Wien. Ent. Mon., Vol. 4, p. 225, nº 72 (1860) (Batjan, Ternate, Djilolo, Morty, Dodinga, Halmahera (Ternate);
    a. *var. Oberthuri*, Rothschild, Nov. Zool., Vol. 2, p. 210 (1895);
    b. *var. Felderi*, Rothschild, idem (N. Moluccas, Batjan, Halmahera (Ternate), Morty).
11. *P. Riedeli*, Kirsch, Proc. Zool. Soc. Lond., p. 275, nº 1, pl. 19, f. 1 (♂) 2 (♀) (1885) (Timor Laut).
12. *P. amphrysus*, Cramer, Pap. Exot., Vol. 3, p. 43, t. 219, f. A. (1782) (Java);
    a. *var. palabuana*, Fruhstorfer, Ent. Nachr., p. 44 (1894), (Palabuan (Java);
    b. *var. sumatranus*, Hagen, Iris, Vol. 7, p. 14, n. 5 (1894) (Sumatra);
    c. *var. ruficollis*, Butler, Trans. Linn. Soc. Lond. Vol. 1, p. 552 (1875) (Borneo, Malacca, Nias, Sumatra);
    d. *var. flavicollis*, Druce, Proc. Zool. Soc. Lond. p. 356 (1873) (Borneo).

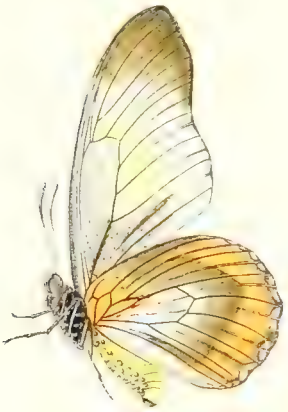
13. *P. cuneifera*, or *cuneatus*, Oberthur, Etud. d'Ent. livr. 4, p. 110, sub. n. 91 (1879) (Java, Preanger, Ardjoana, Mount Gede).
14. *P. helena* (type), Clerck, Icon. Ins., Vol. 2, t. 22, f. 1 (1764) (Amboina, Ceram);
    a. *var. bouruensis*, Wallace, Trans. Linn. Soc.Lond., Vol. 25, p. 39 (1865) (Bouru);
    b. *var. leda*, Staudinger, Iris, Vol. 4, p. 74 (1891) (Saleyer, Macassar);
    c. *var. papuensis*, Wallace, Trans. Linn. Soc. Lond. Vol. 25, p. 38 (1865), or *papuanus* Oberthur, Trans. Linn. Soc. Lond. Vol. 25, p. 38 (1865); = *melpomena*, Rippon, Icon. Ornith. Vol. 2, p. 46 (1898) (Amberbaki, New Guinea);
    d. *var. Jupiter*, Oberthur, Etudes Entom. Livr. 4, p. 31, nº 11, pl. 1 (1879) (Java);
    e. *var. Holzi*, Pagenstecher, Jahrb. Nassau Ver. Naturk. p. 103, nº 3 (1890) *rutilans* of Oberthur, (Java, S. W. Sumatra).
15. *P. nereis*, Doherty, Journ. Asiat. Soc. Bengal, Vol. 60, Pt. 2, nº 1 (1890) (Engano or Pulo Telanjang).
16. *P. cerberus*, Felder, Verh. Zool. bot. Ges. Wien, p. 291, nº 31 (1864) = *pompeus*, Gray, Cat. Lepid. Ins. Brit. Mus. Part. 1, p. 5, nº 15 (1856) (Java, Bengal, Andaman Islands (*heliaconoides*) of Moore, Proc. Zool. Soc. Lond., p. 592 (1877) (Cacher, Burmah, Sikkim, Chin Lusnai, Darjiling, Silhet, Khasia Hills, Kurseong, Assam, Malacca, Sumatra, Nias, Natuna Islands, Borneo, Banguey Islands).
17. *P. hephaestus*, Felder, Verh. Zool. bot. Ges. Wien, Vol. 291, nº 29 (1864) (Celebes, Saleyer, Bonthain, Bantimoerong).
18. *P. æacus*, Felder, Wien. Ent. Mon., Vol. 4, p. 225, nº 71 (1860) (Cochinchina, India, Darjeling, Bengal, Siam, Cashar, Tavoy, Sinbyoodine, Sikkim, Chin Lushai, Khasia Hills, Nepaul, Moulmein, Hongkong, Malacca).
    a. *var. formosanus*, ♂ Rothschild, Novit. Zool. Vol 6, p. 67 (1899) (Formosa).
19. *P. rhadamanthus*, Lucas, Lépid. Exot., p. 5 (1835) (Manilla : Philippines).
20. *P. Plateni*, Staudinger, Corresp. Bull. Ent. Ver. Iris Dresden, nº 5, p. 274 (1888) (Palawan).
21. *P. Dohertyi*, Rippon, Ann. Mag. Nat. Hist., Vol. 2, p. 295 (1893) (Talaut);
    a. *var. fasciculatus*, Rothschild, ms. name (Talaut Islands).
22. *P. miranda*, Butler, Lepid. Exot., Vol. 1, p. 3, pl. 1, (1869) (Sarawak, Sandakan (W. Borneo).
23. *P. magellanus*, Felder, Wiener Ent. Mon. Vol. 6, p. 382, nº 3 (1862) (Babuyanes, Luzon, Polillo, E. Mindanao (Philippines).
24. *P. andromache*, Staudinger, Iris, Dresden, Vol. 5, p. 393 (1892) (N. Borneo, Kina Balu).

The following may be regarded at present as true species : 1. *P. hippolytus*, 2. *P. darsius*, 3. *P. minos*, 4. *P. Vandepolli*, 5. *P. haliphron*, 6. *P. cerberus*, 7. *P. helena*, 8. *P. amphrysus*, 9. *P. rhadamanthus*, 10. *P. criton* (?), 11. *P. Dohertyi*, 12. *P. miranda*, 13. *P. magellanus*, 14. *P. Plateni*, 15. *P. andromache*. The others cited are possibly local forms of some of these species. But even these 15 species may yet be reduced in number by the accumulation of new materials.



1a

1



2

D. antimachus ♀

D. zalmoxis ♀

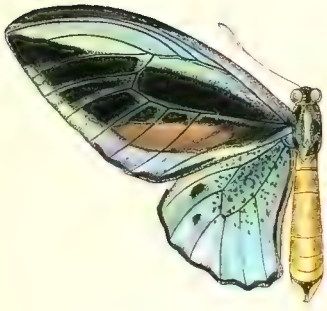
3b

3

3a

Sch. meridionalis ♂

4

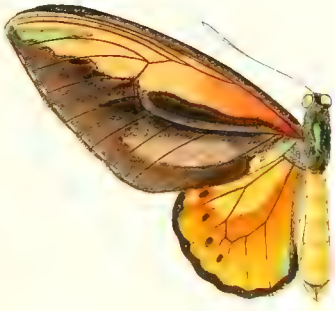


5a

O. arruana, var. cumacus ♂

O. lydus ♀

5



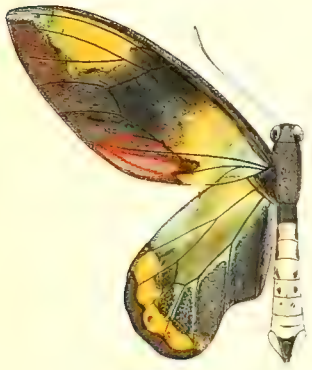
6a

6

O. lydius ♂

O. Urvilliana, var. coelestis ♀

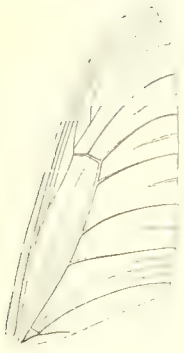
O. Urvilliana, var. ex



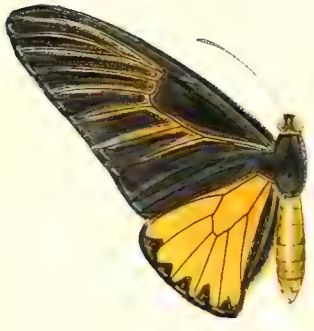
Æ. regis ♂
(upperside)

Æ. victoriæ ♂

Æ. regis ♂
(underside)



T. Trojana ♂



P. magellanus ♂

P. macedonius ♂

EXPLANATION OF PLATES

PLATE 1.

Fig. 1. *Drurya antimachus*, Drury ♀, Underside.
— 1a. — — — Upperside.
— 2. *Drurya zalmoxis*, Hewitson ♀, Underside.
— 3. *Schoenbergia meridionalis*, Rothschild, Upperside.
— 3a. — — — Neuration.
— 4. *Ornithoptera aruana*, Felder, *var. eumæus* ♂ Rippon, Upperside.
— 5. *Ornithoptera lydius*, Felder ♂, Upperside.
— 5a. — — — ♀, —
— 6. *Ornithoptera Urvilliana*, Guérin, *var. cælestis*, ♂ Rothschild, Upperside.
— 6a. — — — — ♀ — —

PLATE 2.

Fig. 1. *Ætheoptera regis*, Rothschild ♂, Upperside.
— 1a. — — — ♂, Underside.
— 2, 2a. *Ætheoptera Victoriæ*, Godman & Salvin, Neuration ♂.
— 3. *Trogonoptera Trojana*, Honrath ♂, Upperside.
— 3a. — — — Neuration, ♂ & ♀.
— 4. *Pompeoptera magellanus*, Felder, ♂ appearence in the ordinary position.
— 4a. — — — ♂ opalescent appearence when viewed at a proper angle of light.
— 4b, c. *Pompeoptera magellanus*, Felder, Neuration ♂.

(All the figures are reduced to 1/2 the natural size).

London S. E., 15th January, 1902.